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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/681,874	10/07/2003	Gloria Borgstahl	NE-0002	7396

7590

10/12/2005

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EXAMINER

YUN, JURIE

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 10/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/681,874	Applicant(s) BORGSTAHL ET AL.	
	Examiner Jurie Yun	Art Unit 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The amendment filed 8/10/05 has been entered.
2. The replacement drawing (Figure 1) was received on 8/10/05. The drawing is accepted.
3. The 35 U.S.C. 112, second paragraph rejection of claims 4-9 has been withdrawn.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, and 4-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowen et al. (USPN 6,782,076 B2) and further in view of Amelio (USPN 3,866,067) and Atac et al. (USPN 5,978,444).
6. With respect to claims 1 and 4, Bowen et al. disclose a digital topography imaging system comprising: an x-ray emitting source (12); a sample holder (42); a charge coupled device (CCD) camera (column 4, lines 16-17); and a means for acquiring and displaying images of a sample; wherein x-rays from the x-ray emitting source pass through a sample, and are converted by the CCD camera into electrical signals so that the resulting x-ray reflection profiles are measured and the structure of the sample is acquired and displayed (column 4, lines 35-52).

Bowen et al. do not disclose the CCD camera with antiblooming circuitry which reduces pixel image corruption due to CCD camera pixel overloading. Amelio discloses antiblooming circuitry for a CCD (column 1, lines 5+). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use antiblooming circuitry in the Bowen et al. CCD camera, for better image resolution.

Bowen et al. are silent as to whether the CCD camera converts x-ray signals to electrical signals without the use of phosphor. Atac et al. disclose a direct conversion CCD (column 2, lines 1+). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the direct conversion CCD taught by Atac et al., in the Bowen et al. apparatus, to allow for better image resolution (column 1, lines 31-42) and to allow detection of X-rays directly and on a real-time basis (column 2, lines 3-5).

7. With respect to claim 9, Bowen et al. disclose determining the crystalline structure of a sample (column 1, lines 1-5).

8. With respect to claim 2, Bowen et al. disclose the CCD camera has a pixel size of less than 10 μm (column 4, line 19).

9. With respect to claims 5-8, Bowen et al. do not disclose the specific method steps claimed. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use those known processing techniques to provide clear images in the Bowen et al. apparatus, to enhance image resolution.

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10. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bowen et al. (USPN 6,782,076 B2) and further in view of Amelio (USPN 3,866,067) and Atac et al. (USPN 5,978,444) as applied to claim 1 above, and further in view of Chapman et al. (USPN 5,987,095).

11. With respect to claim 3, Bowen et al. do not disclose the x-ray source has a shutter, allowing for variable exposure times. Chapman et al. disclose an x-ray source with a shutter (14). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the x-ray source of Bowen et al. include a shutter, to allow for exposure control and limit unnecessary scatter, as taught by Chapman et al. (column 4, lines 55-57).

Response to Arguments

12. Applicant's arguments filed 8/10/05 have been fully considered but they are not persuasive. Applicants argue that it would not be obvious to one of skill in the art that the deficiencies in the teachings of Bowen et al. can be overcome by the teachings of Amelio. Applicants agree that Amelio teaches CCD devices with light sensing elements comprising antiblooming circuitry, and that the light sensing elements of Amelio accumulate charge in response to incident radiation such as light, but that there is no teaching or suggestion that the light sensing elements of the CCD devices of Amelio can be adapted for use in sensing invisible, diffracted x-ray energies. However, Amelio was only relied upon for the teaching of antiblooming circuitry. Whether the radiation is visible light or x-rays is not relevant, because both types of radiation can cause overloading in CCDs, and would benefit from antiblooming circuitry.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie Yun whose telephone number is 571 272-2497. The examiner can normally be reached on Monday-Friday 8:30-5:00pm.

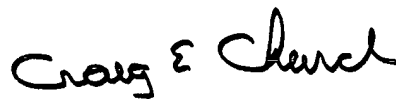
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on 571 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jurie Yun
October 5, 2005



Craig E. Church
Primary Examiner